Al-Furat Al-Awsat Technical University,

Al-Mussaib Technical College,

Department of Soil and Water Technical

جامعة الفرات الأوسط التقنية
الكلية التقنية المسيب
قسم تقنيات التربة والمياه

First Cycle – Bachelor's degree (B.Sc.) – *Soil and Water Technical* بكالوريوس تقنيات تربة ومياه

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جدول المحتويات

1. Mission & Vision Statement

Vision Statement

The academic staff of the Soil and Water Technologies Department at Al-Musayab Technical College, University of Al-Furat Al-Awsat Technical University, believe that students achieve an understanding of soil and water specialties by combining coursework, laboratory experiences, research, and fieldwork. This combination of educational methods leads students to a balanced understanding of the scientific methods used in soil and water technologies for making observations, developing ideas, and creating theories about agricultural applications and innovations.

Mission Statement

The academic staff of the Soil and Water Technologies Department at Al-Musayab Technical College strive to achieve a multifaceted mission at the Middle Euphrates Technical University. The program aims to provide all students in the Soil and Water Technologies Department with the fundamental knowledge of soil and water technologies.
The curriculum and guidance are designed to prepare graduates for their professional futures, whether they choose to work as agricultural technicians or for students seeking to fulfill higher education requirements for a master's degree. This program aims to prepare a qualified agricultural technician in the agricultural field of soil and water technologies and their applications.

2. Program Specification

Programme code:	B.Sc.-PME	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

. The description of the academic program and student learning outcomes can be comprehensively achieved by providing a general justification for students who have maximized the scientific opportunities available in the department. This is accompanied by a description of each course

within the Soil and Water Technology program. This program equips agricultural staff with qualifications in soil and water technologies and significant knowledge and advancements in agricultural sciences/soil and water sciences. Graduates possess the ability to conduct agricultural projects and more. Graduates can perform soil and water analyses. The student in the Soil and Water Technology department has gained a lot of hands-on experience through laboratory experiments. This practical experience gained through field observation enhances theoretical aspects and knowledge. Furthermore, this program provides graduates with knowledge of soil and water technology standards and market assessments for state management concepts in practice. They have the ability to work in agricultural units. Graduates have the capability to work in all agricultural institutions within the Soil and Water Technology specialization. For all levels of this program, courses and curricula can be classified as core or supportive, depending on the nature of the fundamental scientific concepts of the academic materials and the extent to which the student needs information that enhances their understanding and awareness.

Level 1. The first level introduces students to the fundamentals of agricultural sciences, suitable for advancing to all programs within this program group. The core subjects specific to the program are covered in level 2 to prepare for the specialized units in research-led subjects at levels 3 and 4. Thus, university graduates are trained to appreciate how research informs teaching, in accordance with the university and school's important data.

In levels 2, 3, and 4, students gradually learn new and more specialized information in this program. For example, the student will learn about soil principles, soil chemistry, minerals, soil physics, as well as soil fertility, soil salinity, and so on, so that the student is scientifically prepared to study and learn the lessons and other complementary materials for this program. These subjects will qualify the graduate for a bachelor's degree in this agricultural technical specialty. The student will then be qualified to work as an agricultural engineer, or the student may complete higher university studies. In these three levels, students have the freedom to choose more than half of their study units. Decisions about what they study are made with input from personal teachers.

The research and innovation aspect during the student's study will have a significant impact on developing the student's theoretical and practical abilities, especially during experiments and working on developing agricultural skills and linking them to the theoretical aspect. There is a mandatory field course in the first level, which students must pass to advance to the second level, and optional field courses in levels 2, 3, and 4. In the fourth level, all students conduct an independent research project.t .

Various academic tutorial classes are held in levels 1, 2, 3, and 4 to provide continuity and gradual guidance. The first and second level classes include a number of workshops to teach skills, such as using the library, solving problems, and presentation skills, followed by assessment exercises, such as essays, scientific reports, and presentations, as opportunities to practice these skills in the context of a specific subject.

The curriculum over the four years of this program will include a number of scientific visits and trips to agricultural sectors, agricultural projects, laboratories, and desalination stations.

3. Program Objectives

A- Cognitive goals

1. Teaching students soil and water techniques related to agricultural applications, and creating a generation of engineers knowledgeable about all applications of agricultural soil and water.

2- Spreading awareness of knowledge in agricultural sciences / soil and water techniques.

3- Understanding the standards of soil and water techniques and other agricultural applications.

B - The goals and skills of the program

1- Preparing qualified technical engineering personnel to work in agricultural projects and soil laboratories.

2- Has the ability to work in agricultural units and agricultural companies.

3- Proficiency in working in the public sector in associations specialized in agricultural engineering / soil and water technologies.

4. Student Learning Outcomes

The department is concerned with preparing qualified personnel to develop agricultural production and serve the community by conducting applied research to find solutions to community problems in the agricultural field, especially in the areas of soil and water. Additionally, it participates in implementing extension programs to transfer knowledge and results from applied research and collaborates with other departments locally, regionally, and internationally to enhance education and scientific research. It aims to provide graduates for postgraduate studies with practical and theoretical skills in the field of soil and water sciences. Graduates can pursue their higher studies (Master's) in the same department (Soil and Water Technologies) to gain more experience and skills in this agricultural technical field.

Outcome 1

The graduate has the ability to observe, understand, analyze, and interpret most agricultural problems in the field of soil and water**.**

Outcome 2

. The graduate has the ability to use the acquired knowledge in various soil and water analyses.

Outcome 3

The graduate possesses the ability to deduce and evaluate in solving agricultural problems related to soil and plants.

Outcome 4

The graduate has the ability to evaluate digital data and apply analytical methods for agricultural design purposes

Outcome 5

The graduate has the ability to study and evaluate agricultural projects in groups**.**

Outcome 6

The graduate has the ability to analyze and interpret laboratory results and field tests scientifically in work sites.

5. Academic Staff

Hameed Kadhum Abdul-Ameer | Ph.D. Soil and Water Science | Assist. Professor
Email: Hameed.abass@atu.edu.iq
Mobile no.: 7801721025

Mohammad Tarkhan Abo almeekh| M. Sc. In Plant Introduction | Assist. /Professor
Email: com.muh8@atu.edu.iq
Mobile no.: 0 7803088078

Sabah Lateef Assi | M. Sc. in Soil and Water Science | Assist. /Professor
Email: com.sbh1@atu.edu.iq
Mobile no.: **0** 7803940770

Hassan Hadi Ph.D. in Plant Science | Assist. /Professor
Email: hassan.alkarawi@atu.edu.iq
Mobile no.: **07735401101**

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mohammed malik hamid | Ph.D. in Soil and Water Science | Lecturer
mohammed.hamid@atu.edu.iq
Mobile no.: **7809317873**

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shahad Hussein Obeia | Ph.D. in physics Science Phsical | Lecturer
Email: **shaha.noshi@atu.edu.iq**
Mobile no.: **7804954785**

Sana Qasim Muhammad | Ph.D. in M. Sc. In Plant Introduction | Assist./Professor
Email: **ranaa-h-78@atu.edu.iq**
Mobile no.: **07801503166**

Raeda Hussein Hamid| M.Sc. in Arabic language | Assist./Professor
Email: **Com.rad@atu.edu.iq**
Mobile no.: **07802428219**

Ali Kareem Hussein | M.Sc. in Plant Production | Lecturer
Email: ali.kareemtcm@atu.edu.iq
Mobile no.: **07723924158**

Laith Ali Zaghir | Ph.D. in Work Management | Lecturer
Email: laith.zgeir@atu.edu.iq
Mobile no.: **0 7732395028**

Ghassan Jassim Obaid | M. Sc. In Soil and Water | Assist/Lecturer
Email: ghassan.jassim.tcm@atu.edu.iq
Mobile no.: **0 7735401467**

Ghassanadnan abdluameer | M. Sc. In M. Sc. In Plant Introduction | Assist/Lecturer
Email: **Doaa.fadhli.tcm@atu.edu.iq**
Mobile no.: **07827526899**

Asia Slim Flaih | M. Sc. Geography | Assist/Lecturer
Email: asie.faleih.tcm@atu.edu.iq
Mobile no.: **0 7822197386**

Hiba Sattar Naeem | M. Sc. In | Assist/Lecturer
Email: hibaa.star.tcm@atu.edu.iq
Mobile no.: **0 7717672480**

Yaqoub Sabih Hassan | M. Sc. |in Political science Assist/Lecturer
Email: yaqoup.sabih.tcm@atu.edu.iq
Mobile no.: **0 7756974735**

Abdul Sattar Hashem Abdul Ghani | M. Sc. In Mechanical Engineering | Assist/Lecturer
Email: staarhashim@atu.edu.iq
Mobile no.: **0 7821006178**

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6. Credits, Grading and GPA

Credits

Al-Furat Al-Awsat Technical University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   CGPA of a 4-year B.Sc. degree:

   CGPA = [(1st ^{m}odule score x ECTS) + (2nd ^{m}odule score x ECTS) + ……] / 240

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26111	English language/1	18	32	2.00	B	
ATU26112	Computer application/1	48	27	3.00	B	
ATU26113	Engineering Drawing	48	52	4.00	C	
ATU26114	Plane Surveying	79	96	7.00	C	
ATU26115	General Chemistry	79	96	7.00	C	
ATU26116	Agriculture Machine	79	96	7.00	C	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26121	Arabic language	18	32	2.00	B	
ATU26122	Human Right and Democracy	33	17	2.00	B	
ATU26123	Geology	79	71	6.00	C	
ATU26124	General Ecology	79	71	6.00	C	
ATU26125	Organic Chemistry	79	96	7.00	C	
ATU26126	Remote Sensing	79	96	7.00	C	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26131	Computer application/2	48	27	3.00	B	
ATU26132	Baath crimes	18	32	2.00	B	
ATU26133	Soil Science	79	96	7.00	C	
ATU26134	Soil Morphology	79	96	7.00	C	
ATU26135	Hydrology	79	71	6.00	C	
ATU26136	Desertification	79	46	5.00	C	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26141	English language/2	18	32	2.00	B	
ATU26142	Soil Microbiology	79	46	5.00	C	
ATU26143	Soil Water-Plant Relationship	79	71	6.00	C	
ATU26144	Analytical Chemistry	79	71	6.00	C	
ATU26145	Soil mineralogy	79	71	6.00	C	
ATU26146	Soil Planning	79	71	5.00	C	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26151	Computer application/3	48	27	3.00	B	
ATU26152	Irrigation technical	94	56	6.00	C	
ATU26153	Soil Chemistry	94	56	6.00	C	
ATU26154	Soil Physics	94	56	6.00	C	
ATU26155	Plant Nutrition	94	56	6.00	C	
ATU26156	Organic agriculture	63	12	3.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26161	English language/3	18	32	2.00	B	
ATU26162	Fertilizer & Fertility	79	71	6.00	C	
ATU26163	Soil Salinity	79	71	6.00	C	
ATU26164	Soil Survey & Classification	79	71	6.00	C	
ATU26165	Biochemistry	79	46	5.00	C	
ATU26166	Soil Conservation	79	46	5.00	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26171	Computer application/4	48	27	3.00	B	
ATU26172	Safety and biological Security	33	17	2.00	B	
ATU26173	Drainage Technique	79	71	7.00	C	
ATU26174	Soil-Plant Analysis	79	71	7.00	C	
ATU26175	project/1	45	55	4.00	C	
ATU26176	Experimental Design	93	82	7.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
ATU26181	English language/4	18	32	2.00	B	
ATU26182	Land Reclamation	79	71	6.00	C	
ATU26183	Irrigation Water Quality	79	71	6.00	C	
ATU26184	Irrigation Systems	79	71	6.00	C	
ATU26185	**Soil Management**	79	71	6.00	C	
ATU26186	project/2	45	55	4.00	C	

8. Contact

Program Manager:
Mohammad.T. Abo Almeekh Ms. SC. in Plant Introduction| Assist. /Professor
Email: com.muh8@atu.edu.iq
Mobile no.: 07803088078

Program Coordinator:
Sabah. Assi| Ms. SC.. in soil and Water Techniques | Lecturer
Email: Sabah Lateef Assi
Mobile no.: 0 7803940770